Service Schematics

NOKIA 6280

RM-78

Introduction

Important:

This document is intended for use by authorized service centers only.

"Service Schematics" was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. "Component finder", "Frequency band table" or "Antenna switch table".
The "Signal overview" page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionaly to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

Nokia repair SW	:	Phoenix version 2006.20.9.148
Oscilloscope	:	Fluke PM 3380A/B
Spectrum Analyzer	:	Advanced R3162 with an analog probe
RF-Generator/GSM Tester	:	Rhode & Schwarz CMU 200
Multimeter	:	Fluke 73 Series II

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RETU	3
TAHVO	4
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While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA shall be notified in writing.

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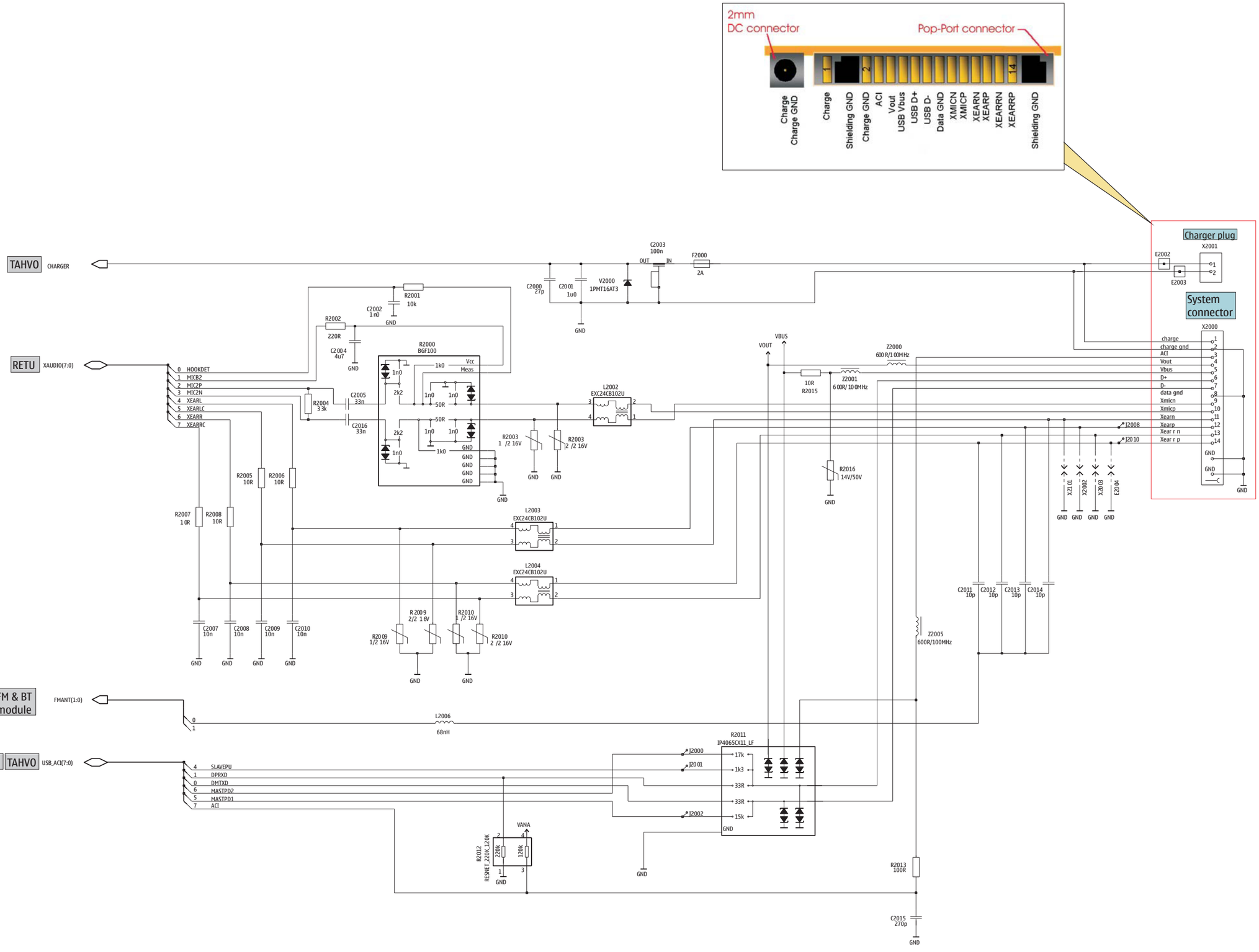
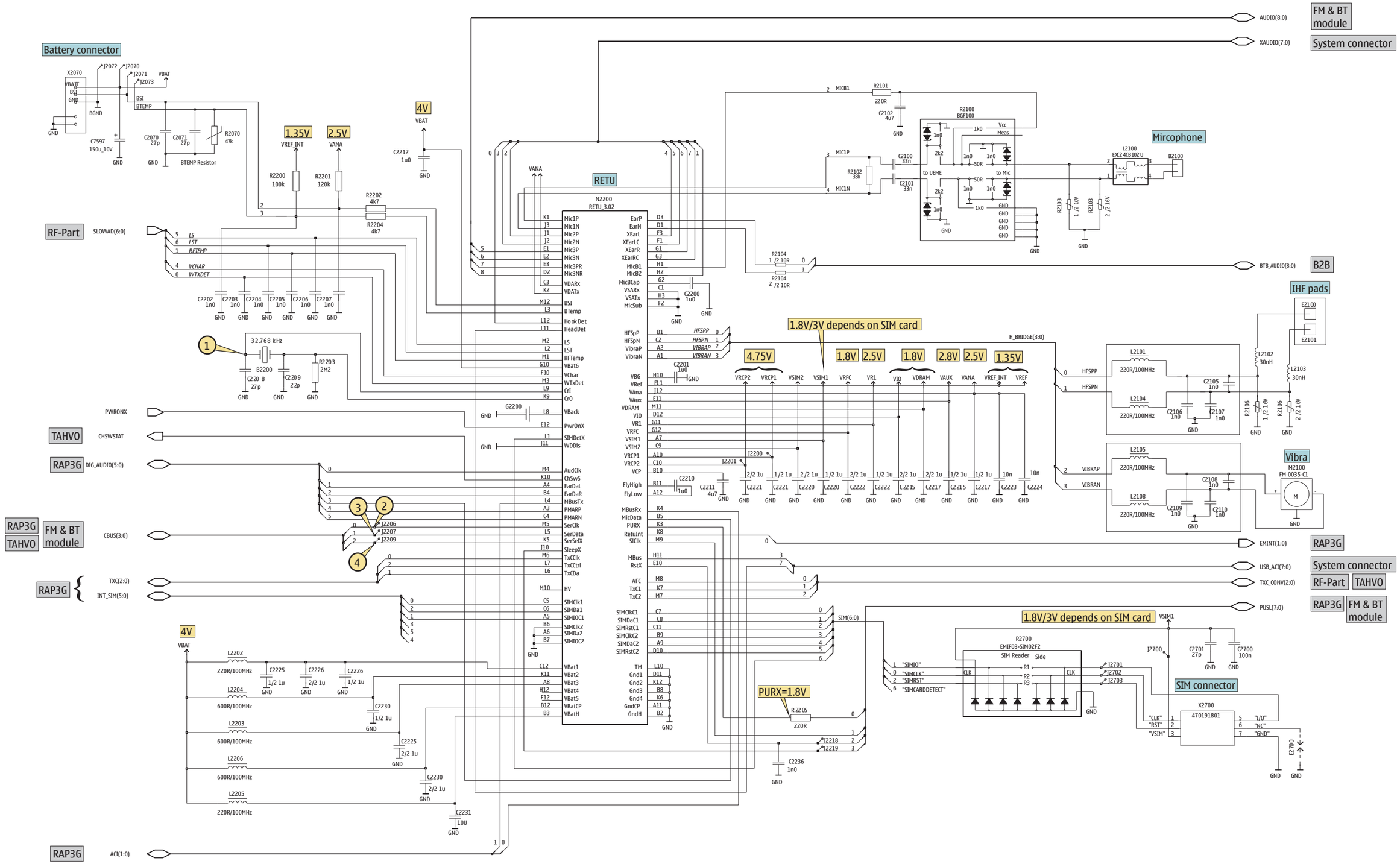
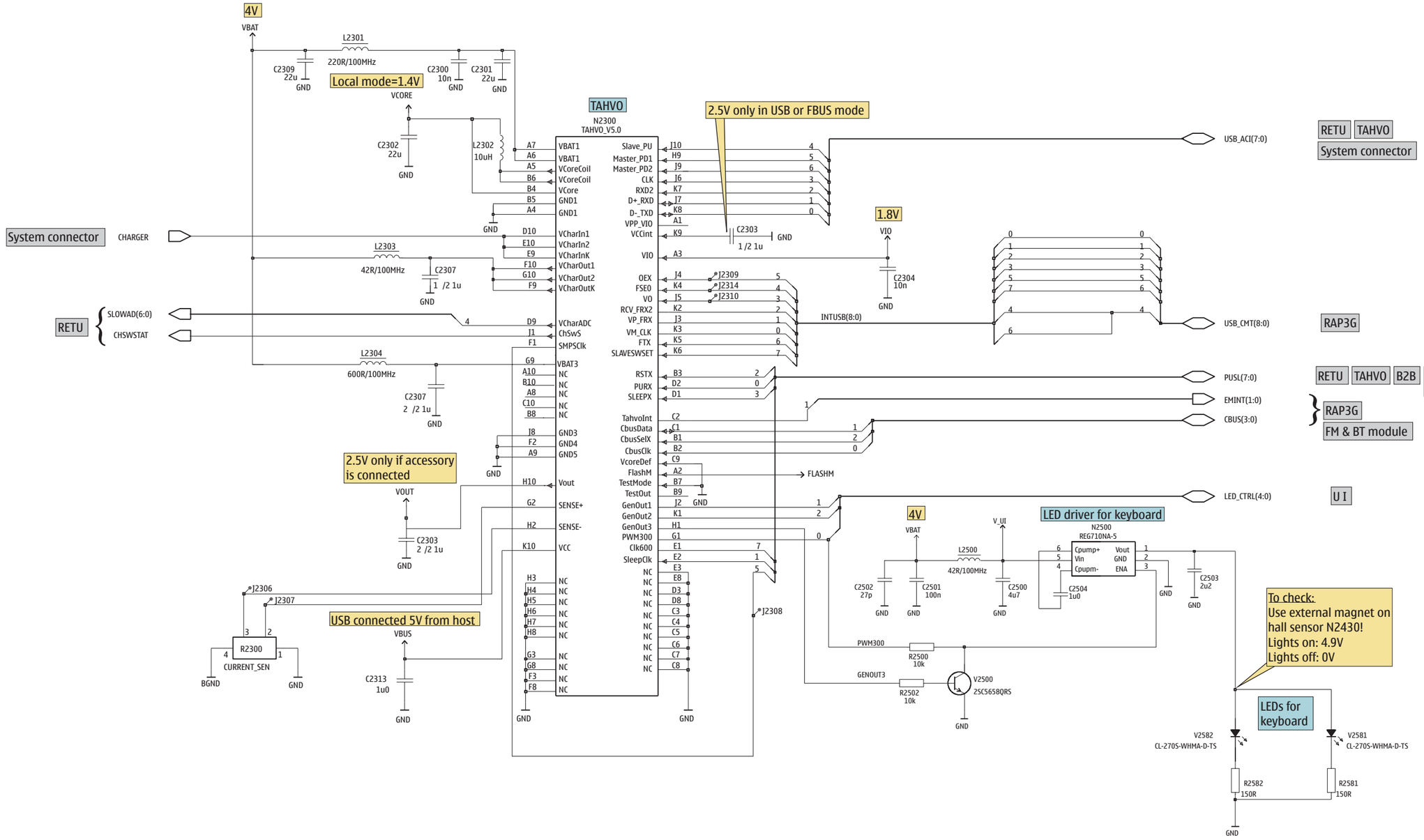
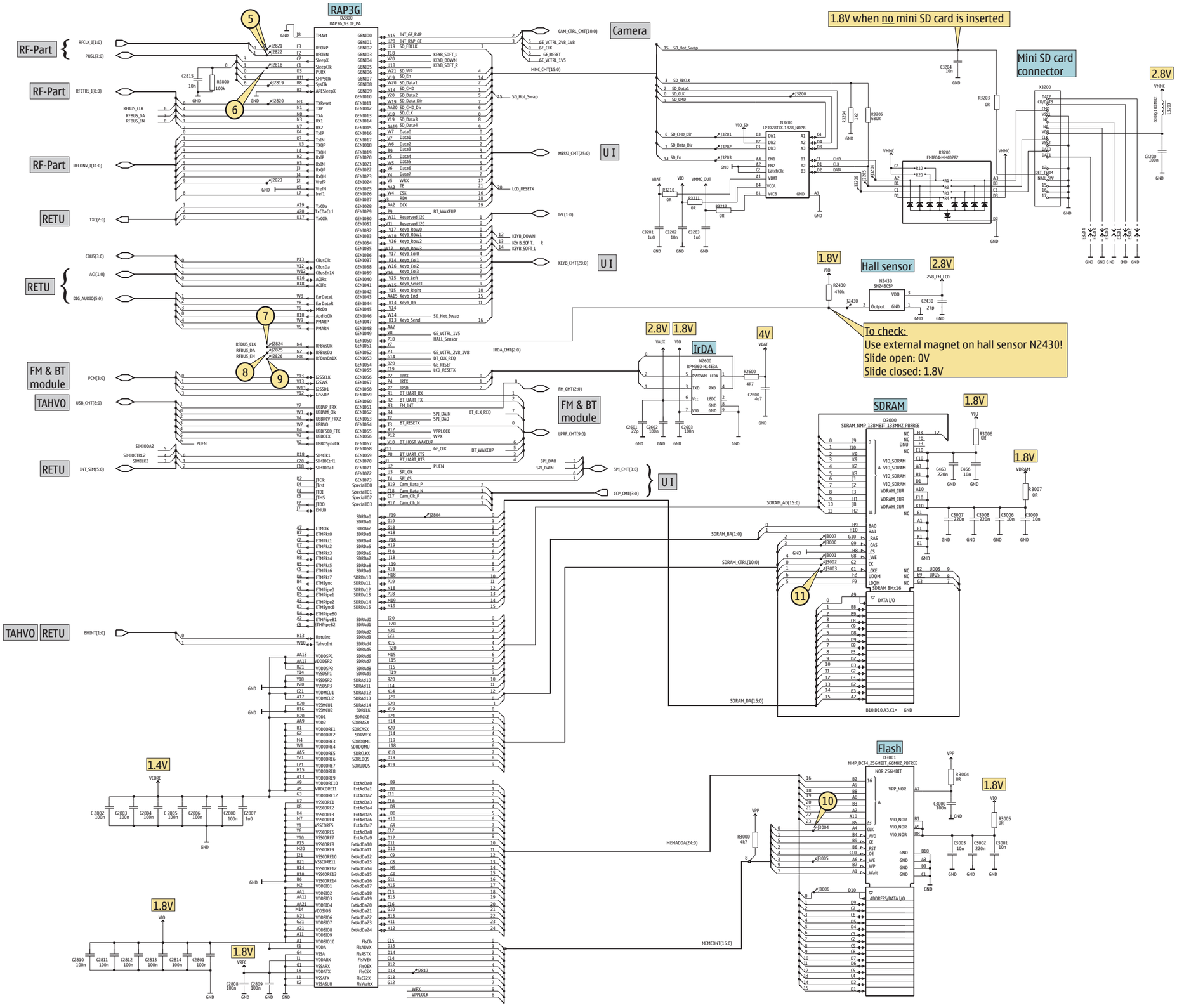
Please send E-Mail to: **training.sace@nokia.com**


2mm
DC connector
Pop-Port connector
Charge GND
Charge GND
Charge
Shielding GND
Charge GND
ACI
Vout
USB Vbus
USB D+
USB D-
Data GND
XMICN
XMICP
XEARN
XEARP
XEARRN
XEARRP
Shielding GND
Charger plug
X2001
E2002
E2003
System connector
X2000
TAHVO
CHARGER
RETU
XAUDIO(7:0)
0 HOOKDET
1 MIC2
2 MIC2P
3 MIC2N
4 XEARL
5 XEARLC
6 XEARR
7 XEARRC
C2000 27p
C2001 1u0
V2000 1PMT16AT3
C2003 100n
F2000 2A
R2001 10k
C2002 1n0
R2002 220R
C2004 4u7
R2000 BGF100
R2004 33k
C2005 33n
C2016 33n
L2002 EXC24CB102U
R2003 1 /2 16V
R2003 2 /2 16V
L2003 EXC24CB102U
L2004 EXC24CB102U
R2005 10R
R2006 10R
R2007 10R
R2008 10R
C2007 10n
C2008 10n
C2009 10n
C2010 10n
R2009 1/2 16V
R2009 2/2 16V
R2010 1/2 16V
R2010 2 /2 16V
VBUS
VOUT
10R R2015
Z2000 600R/100MHz
Z2001 600R/100MHz
R2016 14V/50V
J2008
J2010
X2101
X2102
X2103
X2104
C2011 10p
C2012 10p
C2013 10p
C2014 10p
Z2005 600R/100MHz
charge
charge gnd
ACI
Vout
Vbus
D+
D-
data gnd
Xmicn
Xmicp
Xearn
Xearp
Xear r n
Xear r p
FM & BT module
FMANT(1:0)
L2006 68nH
RETU
TAHVO
USB_ACI(7:0)
4 SLAVEPU
1 DPRXD
0 DMTXD
6 MASTPD2
5 MASTPD1
7 ACI
R2011 IP4065CX11_LF
J2000
J2001
J2002
17k
1k3
33R
33R
15k
R2012 RESNET_220K_120K
220k
120k
VANA
R2013 100R
C2015 270p


Battery connector
RF-Part
TAHVO
RAP3G
RAP3G
TAHVO
RAP3G
RAP3G
FM & BT module
RETU
FM & BT module
System connector
Mircophone
B2B
IHF pads
Vibra
RAP3G
System connector
RF-Part
TAHVO
RAP3G
FM & BT module
SIM connector
1.8V/3V depends on SIM card
1.8V/3V depends on SIM card
PURX=1.8V
4V
4V
1.35V
2.5V
4.75V
1.8V
2.5V
1.8V
2.8V
2.5V
1.35V
AUDIO(8:0)
XAUDIO(7:0)
BTB_AUDIO(8:0)
EMINT(1:0)
USB_ACI(7:0)
TXC_CONV(2:0)
PUSL(7:0)
SLOWAD(6:0)
PWRONX
CHSWSTAT
DIG_AUDIO(5:0)
CBUS(3:0)
TXC(2:0)
INT_SIM(5:0)
ACI(1:0)
H_BRIDGE(3:0)
SIM(6:0)
N2200
RETU_3.02
32.768 kHz
VBAT
VREF_INT
VANA
BTEMP Resistor
to UEME
to Mic
"SIMIO"
"SIMCLK"
"SIMRST"
"SIMCARDDETECT"
"CLK"
"RST"
"VSIM"
"I/O"
"NC"
"GND"


4V
VBAT
L2301
220R/100MHz
C2309 22u
C2300 10n
C2301 22u
GND
Local mode=1.4V
VCORE
C2302 22u
L2302 10uH
TAHVO
N2300
TAHVO_V5.0
2.5V only in USB or FBUS mode
System connector
CHARGER
L2303
42R/100MHz
C2307 1 /2 1u
RETU
SLOWAD(6:0)
CHSWSTAT
L2304
600R/100MHz
C2307 2 /2 1u
2.5V only if accessory is connected
VOUT
C2303 2 /2 1u
J2306
J2307
R2300
CURRENT_SEN
BGND
USB connected 5V from host
VBUS
C2313 1u0
VBAT1
VBAT1
VCoreCoil
VCoreCoil
VCore
GND1
GND1
VCharIn1
VCharIn2
VCharInK
VCharOut1
VCharOut2
VCharOutK
VCharADC
ChSwS
SMPSClk
VBAT3
NC
GND3
GND4
GND5
Vout
SENSE+
SENSE-
VCC
Slave_PU
Master_PD1
Master_PD2
CLK
RXD2
D+_RXD
D-_TXD
VPP_VIO
VCCint
VIO
OEX
FSE0
VO
RCV_FRX2
VP_FRX
VM_CLK
FTX
SLAVESWSET
RSTX
PURX
SLEEPX
TahvoInt
CbusData
CbusSelX
CbusClk
VcoreDef
FlashM
TestMode
TestOut
GenOut1
GenOut2
GenOut3
PWM300
Clk600
SleepClk
C2303 1 /2 1u
1.8V
C2304 10n
INTUSB(8:0)
USB_ACI(7:0)
USB_CMT(8:0)
PUSL(7:0)
EMINT(1:0)
CBUS(3:0)
FLASHM
J2308
RETU
TAHVO
System connector
RAP3G
RETU
TAHVO
B2B
FM & BT module
RAP3G
FM & BT module
LED_CTRL(4:0)
UI
4V
VBAT
L2500
42R/100MHz
C2502 27p
C2501 100n
C2500 4u7
V_UI
LED driver for keyboard
N2500
REG710NA-5
Cpump+
Vin
Cpump-
Vout
GND
ENA
C2504 1u0
C2503 2u2
PWM300
R2500 10k
GENOUT3
R2502 10k
V2500
2SC5658QRS
To check:
Use external magnet on hall sensor N2430!
Lights on: 4.9V
Lights off: 0V
LEDs for keyboard
V2582
CL-270S-WHMA-D-TS
V2581
CL-270S-WHMA-D-TS
R2582 150R
R2581 150R



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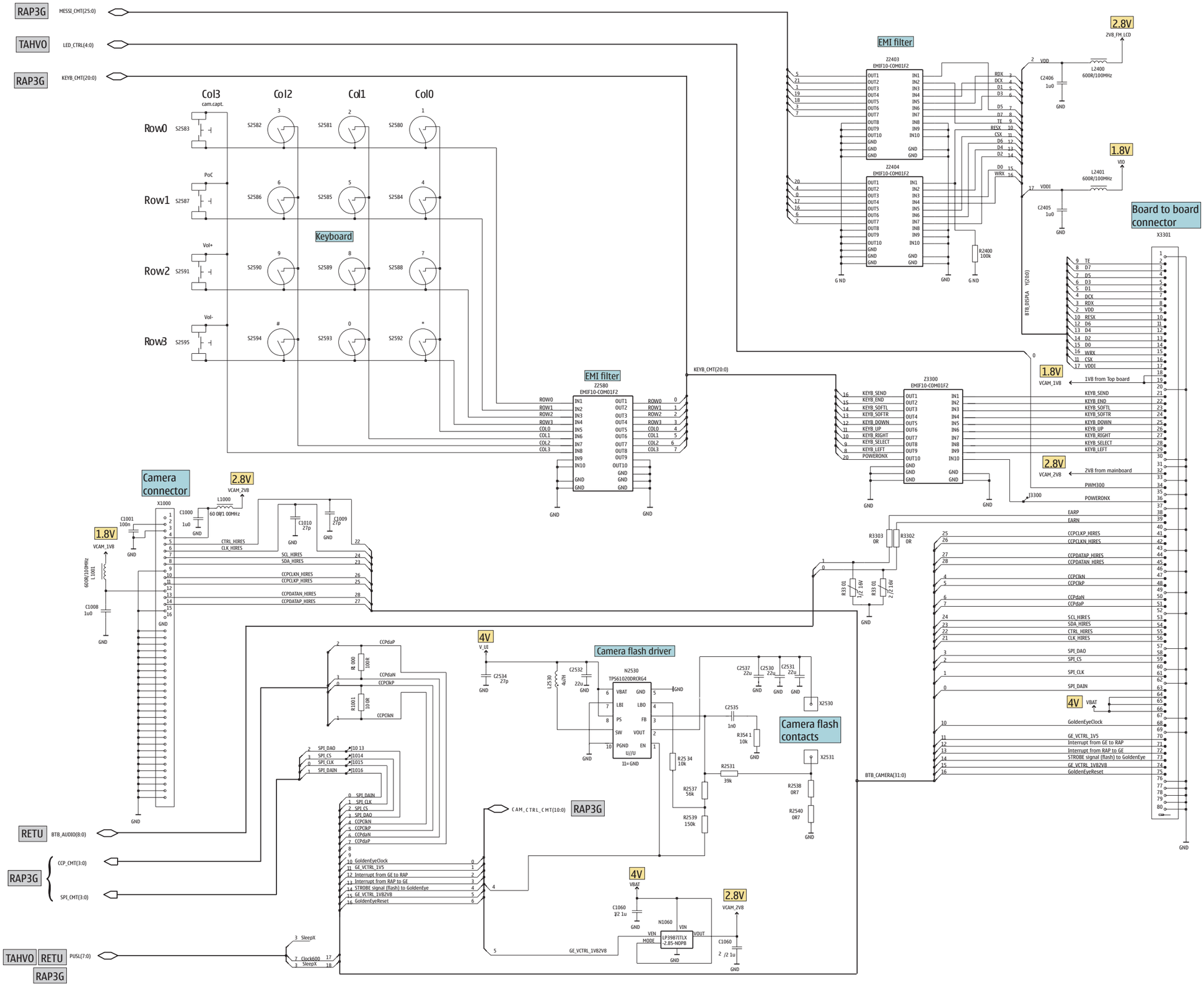

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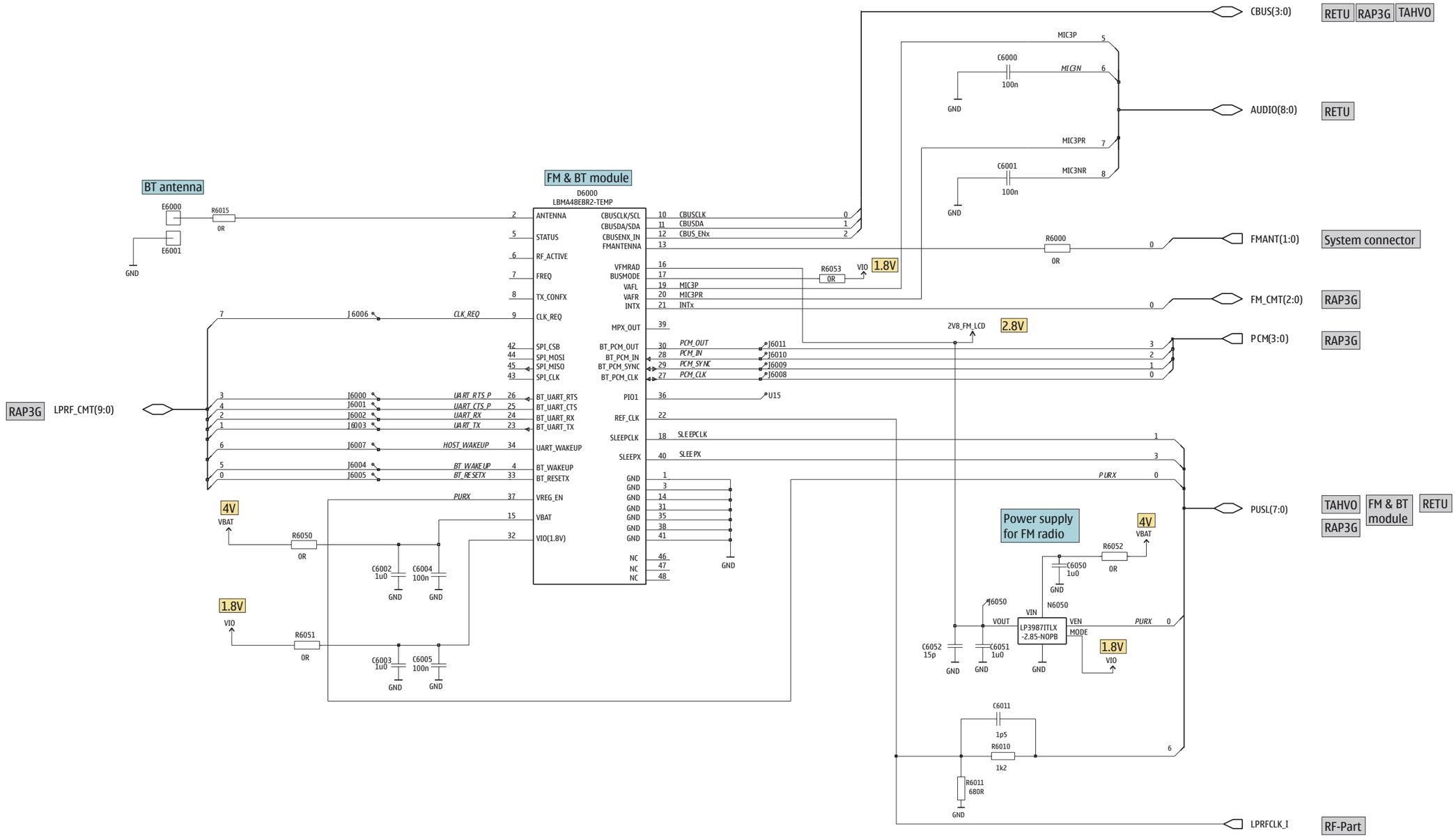
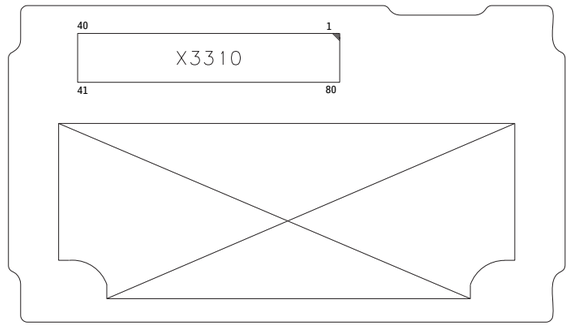
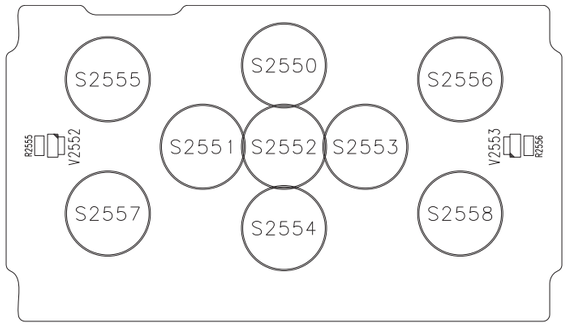
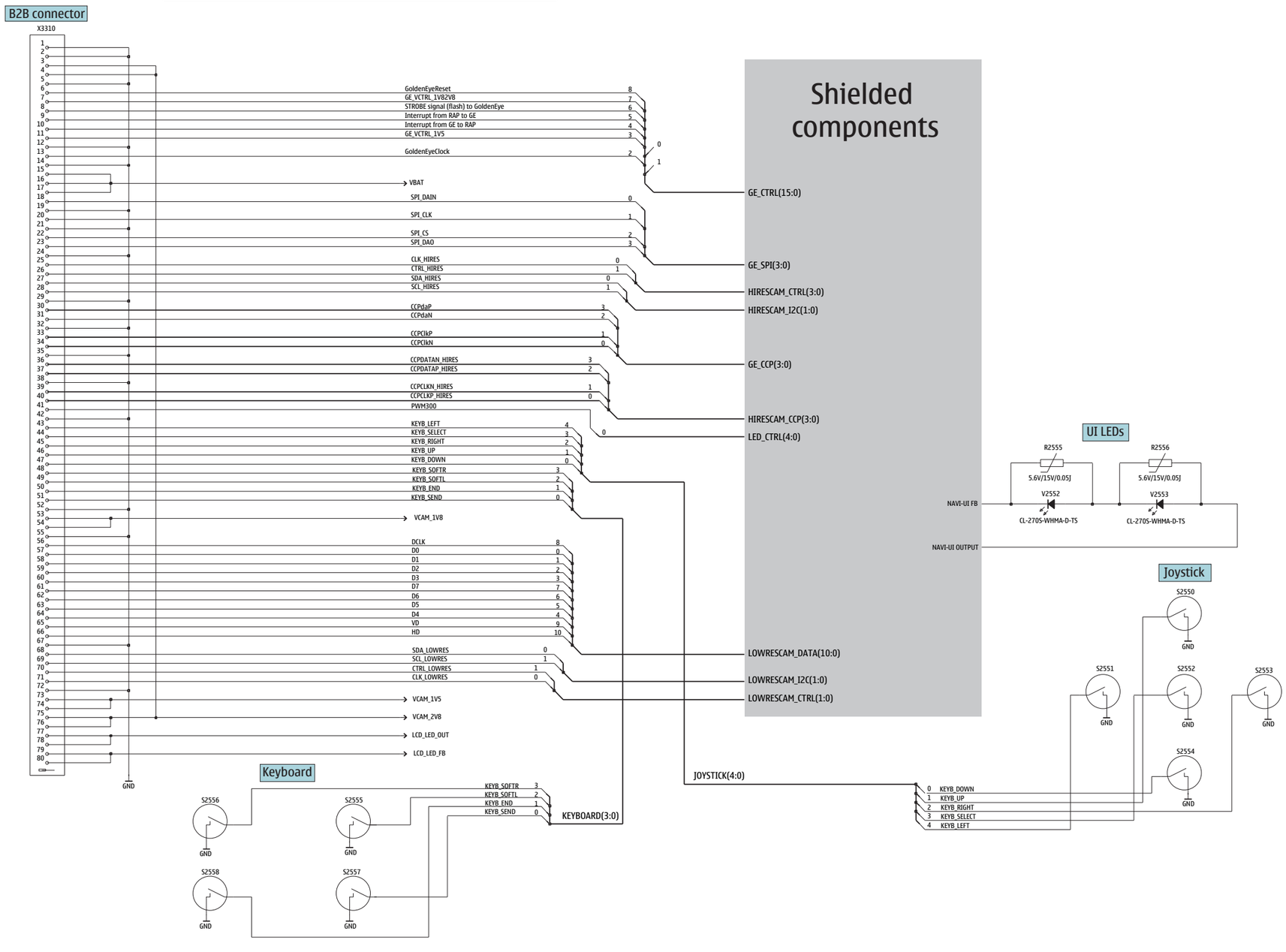

BT antenna
E6000
R6015
0R
E6001
GND
FM & BT module
D6000
LBMA48EBR2-TEMP
ANTENNA
STATUS
RF_ACTIVE
FREQ
TX_CONFX
CLK_REQ
SPI_CSB
SPI_MOSI
SPI_MISO
SPI_CLK
BT_UART_RTS
BT_UART_CTS
BT_UART_RX
BT_UART_TX
UART_WAKEUP
BT_WAKEUP
BT_RESETX
VREG_EN
VBAT
VIO(1.8V)
CBUSCLK/SCL
CBUSDA/SDA
CBUSENX_IN
FMANTENNA
VFMRAD
BUSMODE
VAFL
VAFR
INTX
MPX_OUT
BT_PCM_OUT
BT_PCM_IN
BT_PCM_SYNC
BT_PCM_CLK
PIO1
REF_CLK
SLEEPCLK
SLEEPX
GND
NC
RAP3G
LPRF_CMT(9:0)
J6000 UART_RTS_P
J6001 UART_CTS_P
J6002 UART_RX
J6003 UART_TX
J6007 HOST_WAKEUP
J6004 BT_WAKEUP
J6005 BT_RESETX
J6006 CLK_REQ
PURX
4V
VBAT
R6050
0R
C6002 1u0
C6004 100n
1.8V
VIO
R6051
0R
C6003 1u0
C6005 100n
CBUSCLK
CBUSDA
CBUS_ENx
R6053
0R
VIO
1.8V
MIC3P
MIC3N
MIC3PR
MIC3NR
C6000 100n
C6001 100n
R6000
0R
J6011
J6010
J6009
J6008
PCM_OUT
PCM_IN
PCM_SYNC
PCM_CLK
U15
2V8_FM_LCD
2.8V
SLEEPCLK
SLEEPX
PURX
Power supply for FM radio
R6052
0R
C6050 1u0
J6050
N6050
VIN
VOUT
LP3987ITLX -2.85-NOPB
VEN
MODE
C6052 15p
C6051 1u0
C6011 1p5
R6010 1k2
R6011 680R
CBUS(3:0)
RETU
RAP3G
TAHVO
AUDIO(8:0)
RETU
FMANT(1:0)
System connector
FM_CMT(2:0)
RAP3G
PCM(3:0)
RAP3G
PUSL(7:0)
TAHVO
RAP3G
FM & BT module
RETU
LPRFCLK_I
RF-Part







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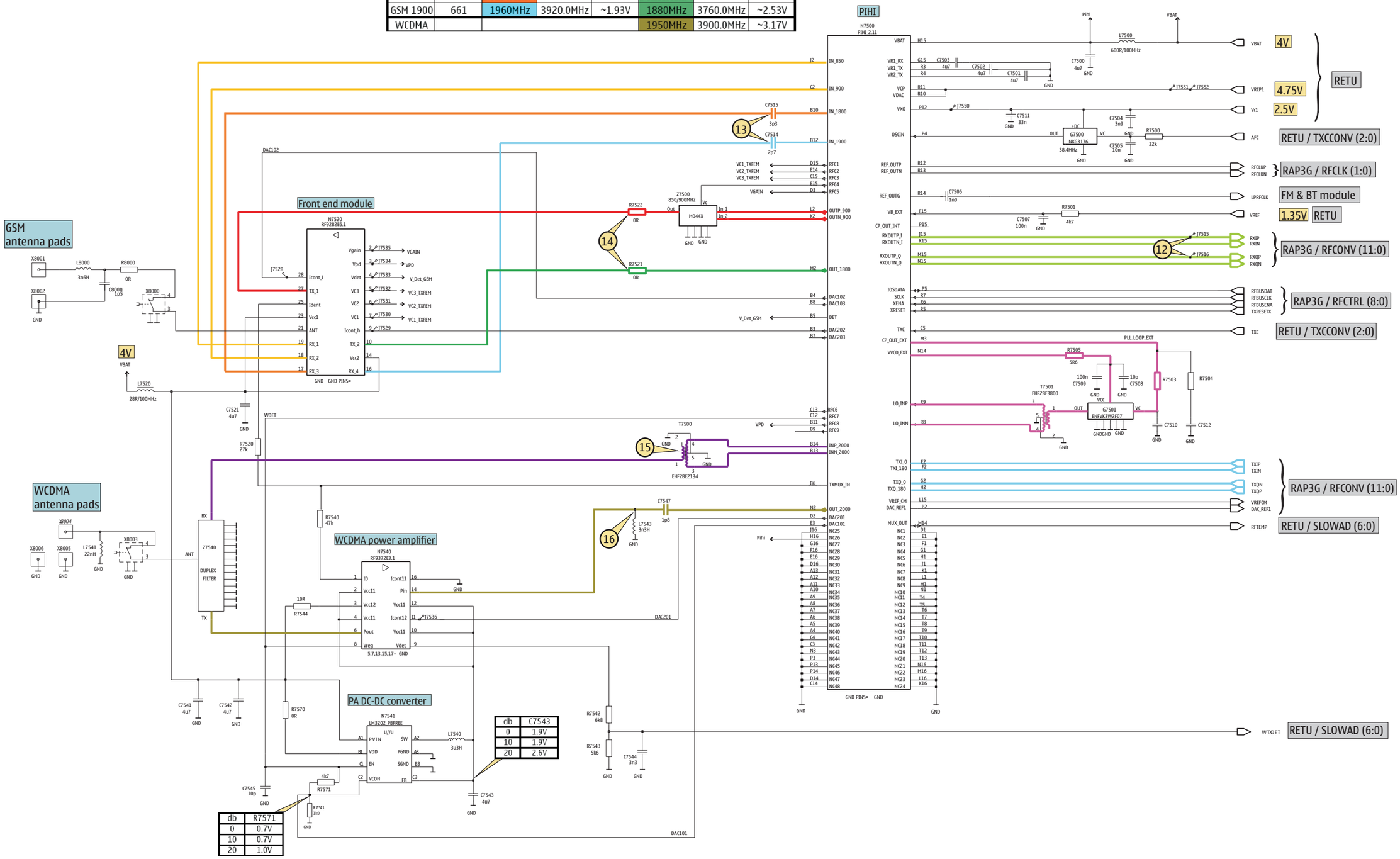
Band	Channel	RX	VCO	VC	TX	VCO	VC
GSM 900	37	942.4MHz	3769.6MHz	~1.33V	897.4MHz	3589.6MHz	~1.70V
GSM 1800	700	1842.8MHz	3685.6MHz	~0.98V	1747.8MHz	3495.6MHz	~1.23V
GSM 1900	661	1960MHz	3920.0MHz	~1.93V	1880MHz	3760.0MHz	~2.53V
WCDMA					1950MHz	3900.0MHz	~3.17V



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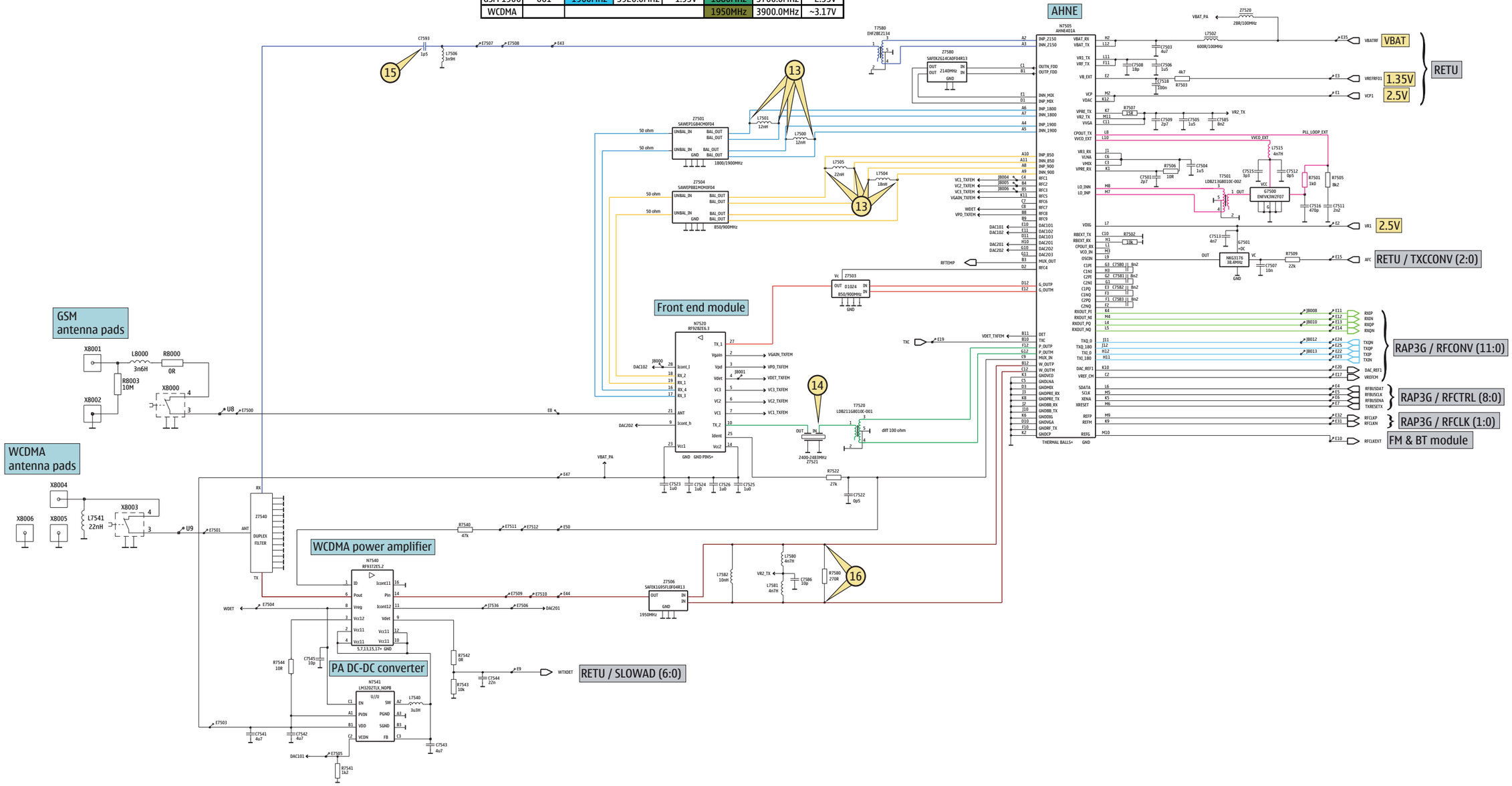
GSM 1900	661	1960MHz	3920.0MHz	~1.93V	1880MHz	3760.0MHz	~2.53V
WCDMA					1950MHz	3900.0MHz	~3.17V



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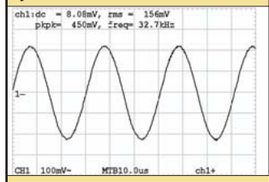
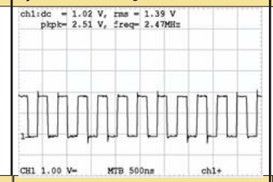
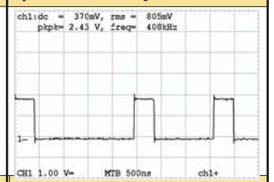
1) 32.768kHz at C2208



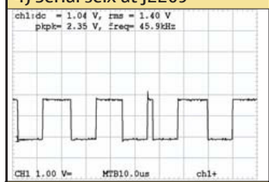
2) Serial Clk at J2206



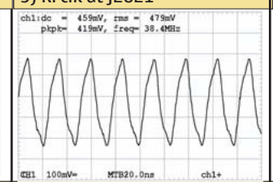
3) Serial data at J2207



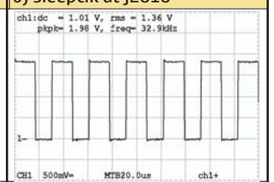
4) Serial selx at J2209



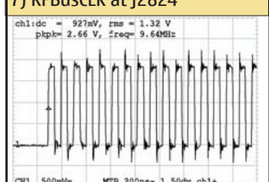
5) RFclk at J2821



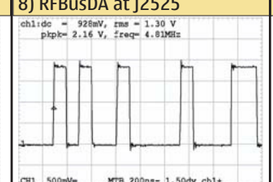
6) Sleepclk at J2818



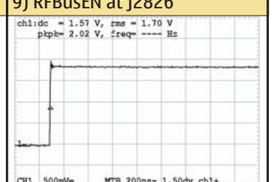
7) RFBusCLK at J2824



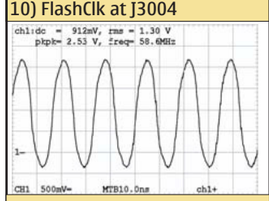
8) RFBusDA at J2525



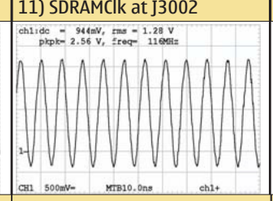
9) RFBusEN at J2826



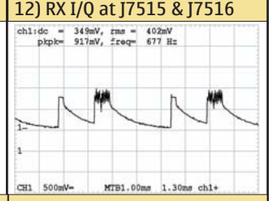
10) FlashClk at J3004



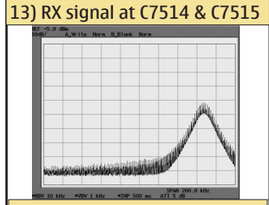
11) SDRAMClk at J3002



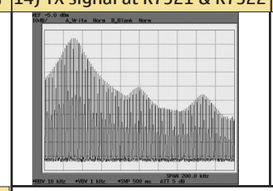
12) RX I/Q at J7515 & J7516



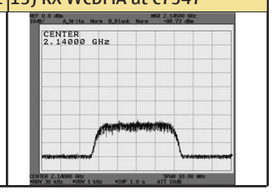
13) RX signal at C7514 & C7515



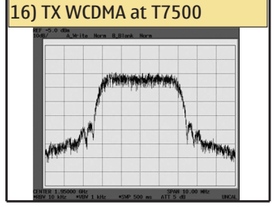
14) TX signal at R7521 & R7522

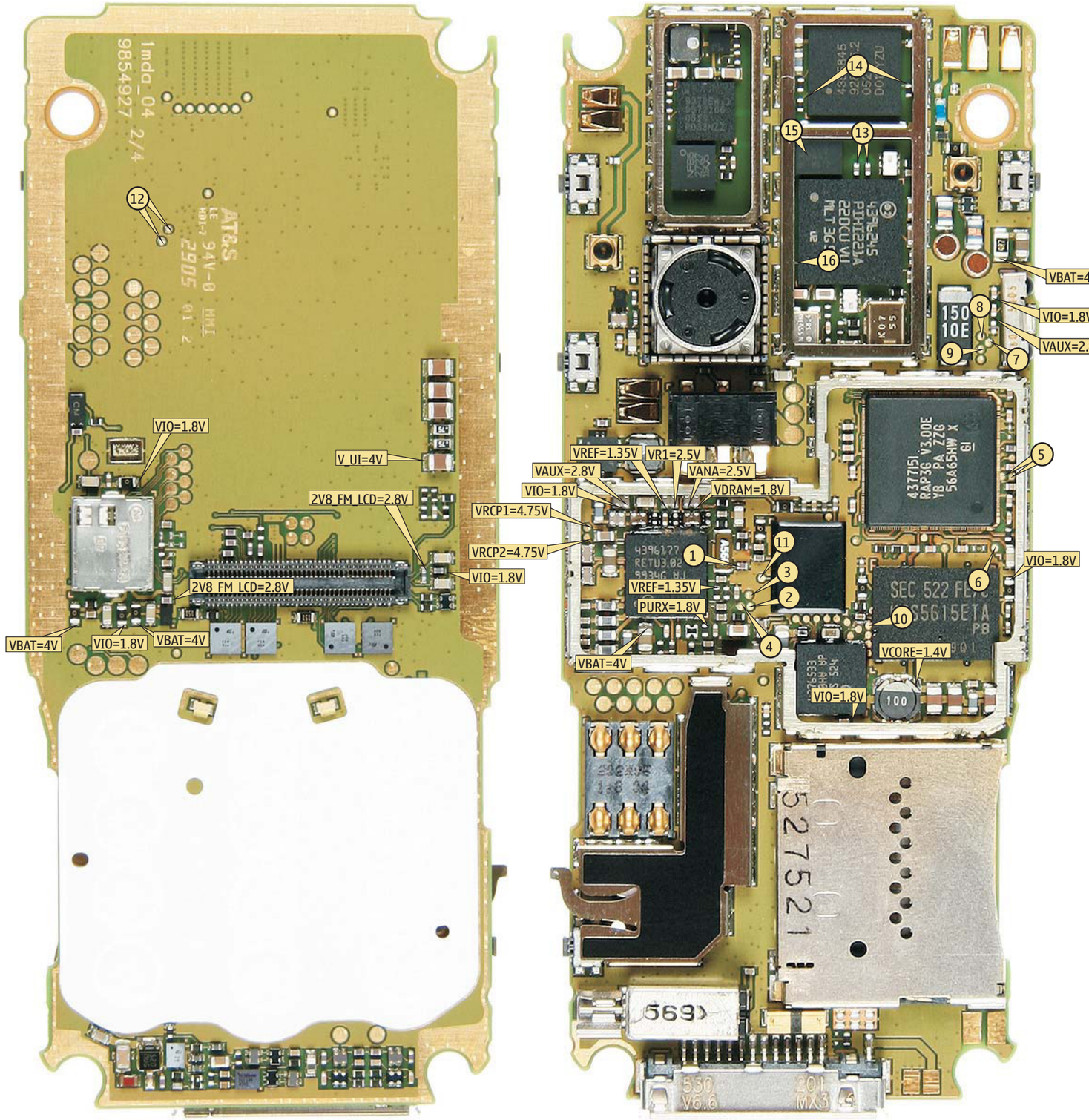


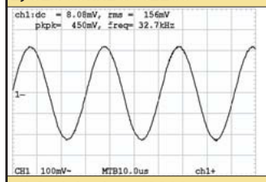
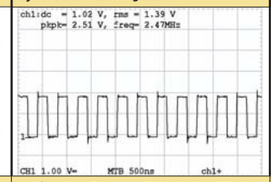
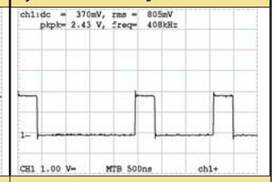
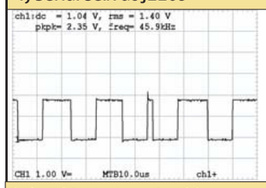
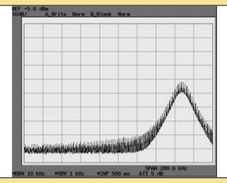
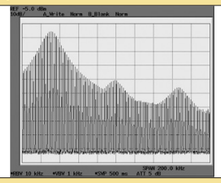
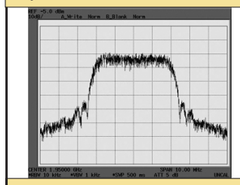
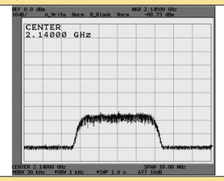
15) RX WCDMA at C7547

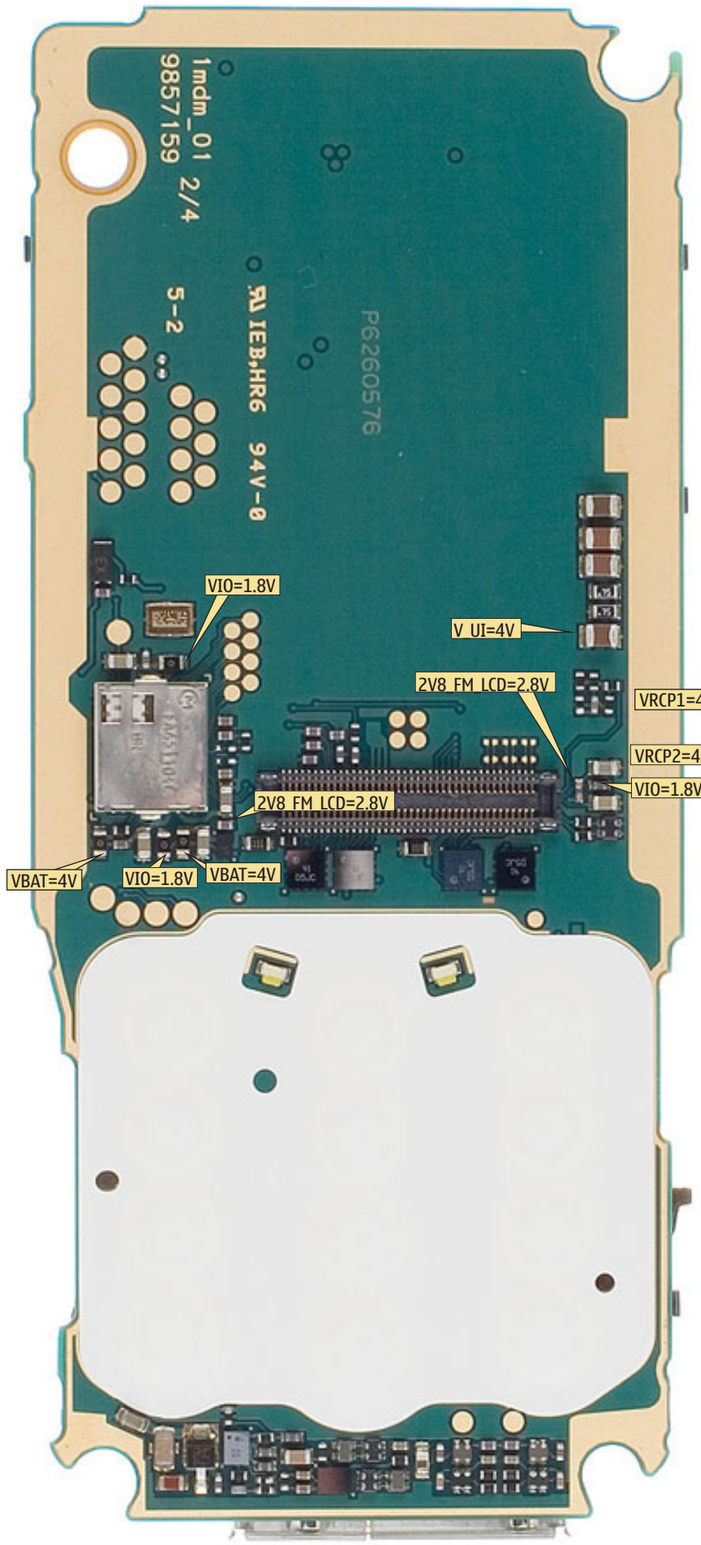


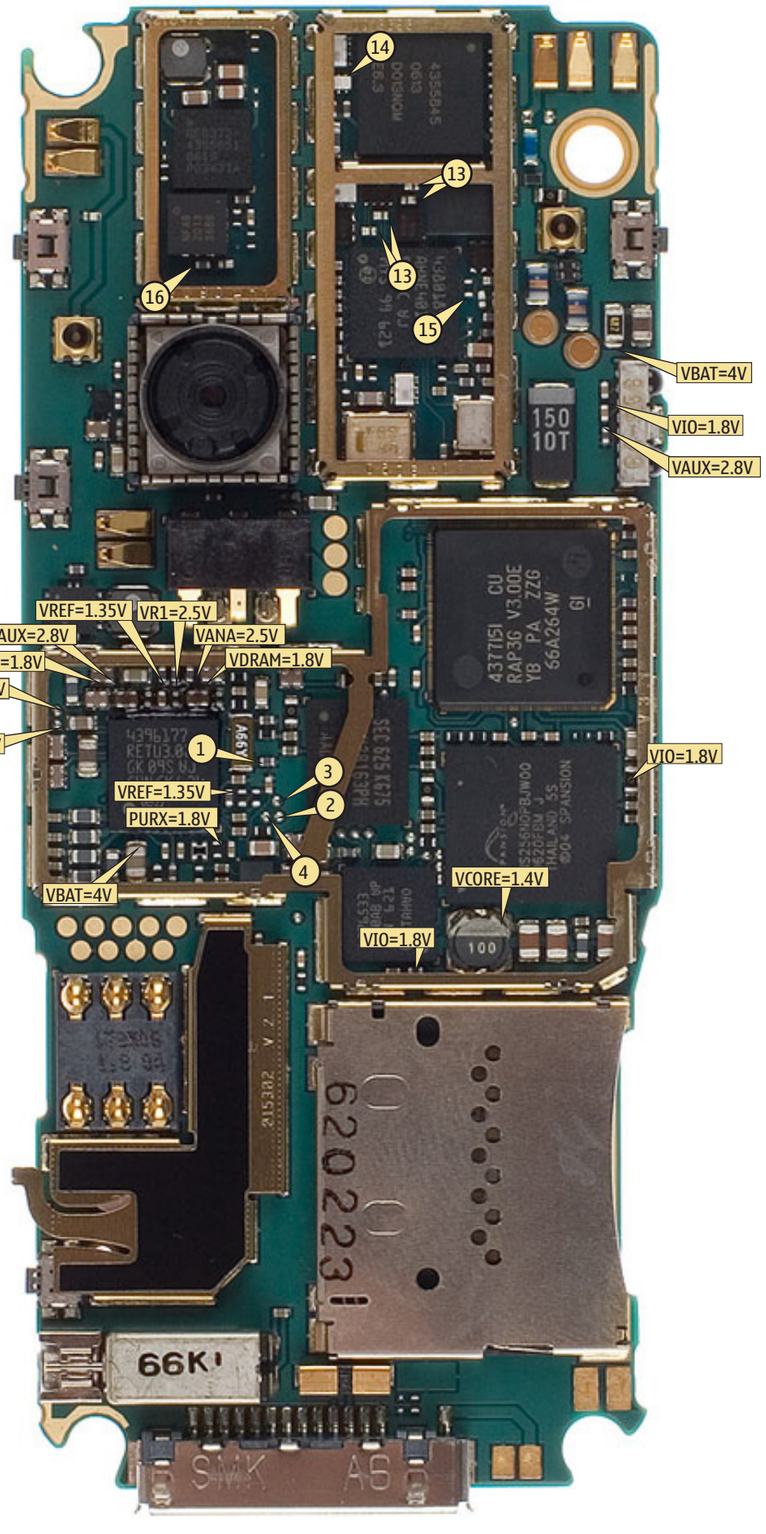
16) TX WCDMA at T7500





1) 32.768kHz at C2208	2) Serial Clk at J2206	3) Serial data at J2207
		
4) Serial selx at J2209	**13) GSM RX at L7500 & L7501**	**14) GSM TX at Z7521**
		
15) WCDMA TX at R7580	**16) WCDMA RX at C7593**	
		





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C1000	N2	C2303	I5	C6002	I2	J2200	K2	J6000	K3	L8000	R8	R2538	L8	S2595	N1
C1001	N2	C2304	G6	C6003	K2	J2201	K2	J6001	K3	M		R2539	K8	T	
C1008	M5	C2307	I5	C6004	I2	J2206	J4	J6002	K3	M2100	B3	R2540	L8	T7500	Q7
C1009	O2	C2309	H8	C6005	K2	J2207	I4	J6003	K3	N		R2581	I4	T7501	O6
C1010	O2	C2313	I6	C6006	J3	J2209	I4	J6004	I2	N1060	O2	R2582	I6	V	
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C2211	J2	C3001	I6	G7501	N7	J3112	N3	L2204	K3	R2104	I3	R8000	Q8		
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C2230	K3	C3203	D3	J2060	H2	J3202	D4	L3200	D3	R2502	E3	S2589	D5		
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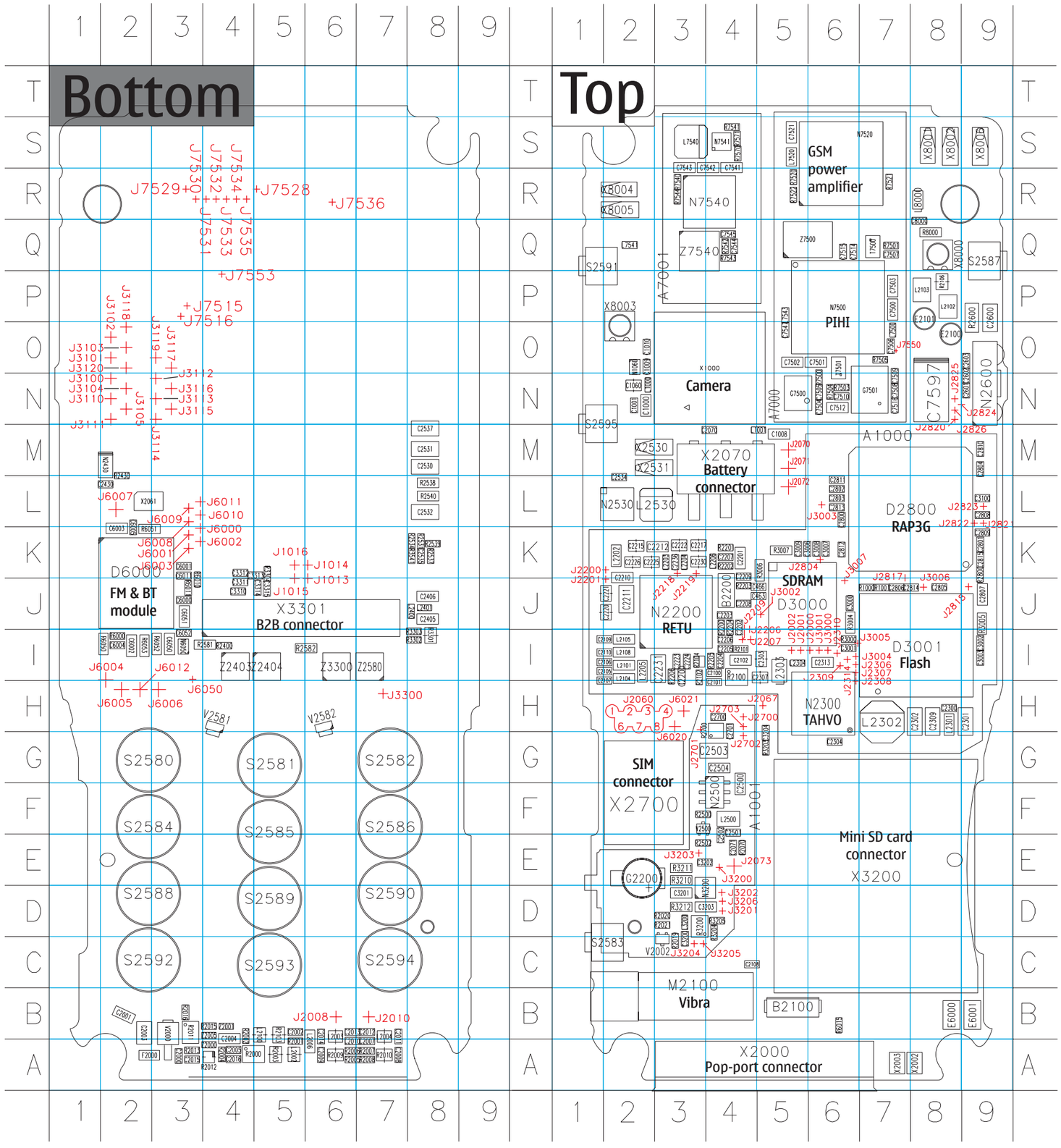

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C1010	O8	C2501	E6	C7503	O3	J2310	I4	L2104	I8	R2020	D7	R7544	R7
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C2230	K7	C3311	J4	J2010	B7	J8004	R5	R1001	J3	R6011	J3	Z7520	R5
C2231	I7	C3312	K4	J2060	H8	J8005	R5	R2000	A4	R6015	B4	Z7521	S5
C2232	K7	C3313	K5	J2067	H5	J8006	R4	R2001	A5	R6050	I2	Z7540	Q7
C2233	K7	C3314	J5	J2070	M5	J8008	O4	R2002	B4	R6051	K2	Z7580	Q5
C2236	K7	C3315	J5	J2071	M5	J8010	O4	R2003	A5	R6052	I3		
C2300	H2	C463	J5	J2072	L5	J8012	O2	R2004	A4	R6053	I2		
C2301	H1	C466	J5	J2073	E6	J8013	O2	R2005	A6	R7501	O5		
C2302	H2	C6000	J3	J2200	K8	L		R2006	A6	R7502	O4		
C2303	I5	C6001	K3	J2201	J8	L1000	N8	R2007	A7	R7503	O5		
C2304	G4	C6002	I2	J2206	J6	L1001	M5	R2008	A7	R7505	O5